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Preserving American and European Furniture and Decorative Arts
White Paper

The Wadsworth Atheneum received a $325,000 National Endowment for the Humanities Grant for Sustaining Cultural Heritage Collections program to help preserve its American and European Decorative Arts Collections. Specifically, the funds were to be used to acquire custom-designed storage equipment for its furniture, metalwork, ceramics, glass, and sculpture collections as part of the renovations scheduled for Phase I of the Collection Storage Renovation Project. All proposed activities were completed.

Project Activities

The project revised the floor plan of the Morgan building basement by relocating the shared staff circulation corridor and all other museum functions to areas outside of the designated art storage spaces. The modification resulted in the creation of a secure zone where art collections are consolidated in protected spaces with access limited to curatorial and collection management staff. The reallocation of space provided not only improved security, but also more efficient, usable collections storage that allows a larger number of objects to be stored in the Morgan basement than before. In the design of this space, the Wadsworth staff chose sustainable preservation standards wherever possible with materials, paints, and finishes low in volatile organic compounds (VOCs). One of the largest achievements in this project was the installation of a new, energy efficient HVAC system that maintains a stable environment aided by the insulation of the exterior walls and windows. In addition, the introduction of new, multiple filtration systems has significantly improved the air quality throughout the art storage area.

Building Envelope. The below-grade windows at the south exterior foundation wall in the Morgan building basement were sealed with bricks and an interior vapor-barrier wall was constructed to insulate the storage environment from excessive fluctuations in temperature, humidity, and water infiltration.

Mechanical HVAC System. HVAC consultant J. P. Puliot designed a new mechanical system, which stabilizes the interior humidity and temperature levels to between 45% and 55% humidity and between 68° and 72° Fahrenheit. New air handlers have replaced a fifty-year-old unit resulting in vastly more efficient and properly controlled cooling and heating in the new storage, as well as in a large exhibition gallery on the floor above this space. The quality of the interior climate has been further supported by tighter controls on the amount of outdoor air introduced to the storage spaces. Moreover, the new mechanical system enables staff to customize storage microclimates according to the environmental needs of the most susceptible materials in the metalwork and archaeological bronze collections.

Security and Fire Protection. Consultants Ducibella and Associates designed a new security system for the collection storage area with access control, intrusion detection, and video surveillance equipment to provide appropriate during- and after-hours

protection against external and internal threats. New, forced entry resistant, heavy gauge, hollow metal doors and frames, tamper resistant hardware, electrified locksets, and high security mechanical locks were installed at access controlled locations. The security system possesses environmental monitoring devices to detect unexpected environmental changes in temperature, humidity, and water infiltration. In addition, the storage redesign included a wet pipe fire protection system that meets Ordinary Hazard design criteria and a Very Early Smoke Detection Apparatus (VESDA) to provide early notification of a potential fire well before the suppression system activates. Together, the new fire protection and environmental detection systems have greatly increased the safety of collections and staff in these spaces.

Lighting and Workspaces. The renovation included new, high-efficiency, color-corrected, fluorescent lighting designed to adjust illumination levels of up to 50 foot candles throughout storage. This lighting has been zoned and switched to minimize over-lighting of areas not in use. The perfected lighting schema in storage has allowed for better working conditions that have benefited staff and visiting scholars.

Custom Designed, Mechanical Assist Fine Arts Storage Equipment. New, high-density, powder-coated, mobile storage systems maximize space for the collections while better protecting the objects. A combination of state-of-the-art units have been utilized to store furniture, sculpture, metals, ceramics, and glass in art storage, including fixed, compact, mechanical, manual, and locked cabinets. There are 65 units with the average dimensions of 8'w x 4'd x 8'h. There are more than 150 additional sections of various configurations of shelving with combinations of drawers, doors, and open units. There are also accommodations for more than 1,056 flat square feet of wall storage on wire screens that are now used to hang 3-D works and secure tall case furniture and sculpture.

Storage layout by object type is as follows:

- Furniture–Wide span shelving units with steel decks are stacked in two to three levels per section. Walls are installed with wire screens against which tall case furniture, clocks, or flat objects are braced. There are floor areas for standing furniture placed on locking carts.
- Sculpture–There are floor areas for standing sculptures. Wire screens are utilized to hang items between large/tall items. The wire screens are used to secure taller items from tipping. There are large shelving units with steel decks in two to three levels per section and slighter, steel units with adjustable shelves in three to five levels per section for smaller objects.
- Silver, Precious Metals, Iron Work, and Archaeological Bronzes–These are stored on shelves, in trays, or customized supports in a special room controlled by a desiccant unit that keeps humidity at 35%.
- Ceramics–Ceramics are stored in a combination of shelves, drawers, trays, and customized supports. The units utilize a combination of six and seven shelves with an additional six sliding drawers per section. Oversize objects are properly supported and stored on platforms against walls out of traffic paths.

In total, Phase I of the Collections Storage Renovation project cost $4,167,712. The funding for this project comprised $1.7 million from a private foundation which had been committed prior to the receipt of NEH funds. The remainder of funds came from an anonymous foundation, the Amelia Peabody Charitable Fund, the Institute for Museum and Library Services (IMLS), the Connecticut Department of Economic and Community Development (DECD), rebates from the utility company, and a loan from the Connecticut Health and Educational Facilities Authority (CHEFA).

In addition to achieving our goal of acquiring and installing custom-designed storage equipment for the furniture, metalwork, ceramics, glass, and sculpture collections, the Museum has accomplished several related objectives in Phase I of the Collection Storage Renovation project.

As of May 31, 2014, more than 12,000 objects have been moved into the newly renovated spaces which are secure, clean, and space-efficient, and we have had no water infiltration to date. Before rehousing the collections approximately 3,500 glass objects were washed while sculpture, furniture, metals, and ceramics were dusted or vacuumed. The Wadsworth staff organized collections by media, geography, and date. A majority of the objects have been measured and photographed. The number of images added to the database as a result of this project increased by more than 14,000 in 18 months. The total number of images now stands at approximately 25,000 or roughly half of all the Museum's collections. The systematic collection of empirical information (dimensions, media, etc.) and descriptive information when rehousing the objects has greatly enriched the quality of information in the existing collection management database. This process has spurred the review of the methods of data collection resulting in greater standardization of terms, categorization, etc. As a result of the storage project, the Museum purchased a software upgrade for the Argus collections database that allows us to better manage images and information while permitting the Museum to offer a publicly searchable database online for the first time ever (to go live in 2015).

Lessons Learned/Best Practices

Aside from moving and cataloguing more than 12,000 objects to secure and clean spaces, the key accomplishment of Phase I of the Collection Storage Renovation project is that it provided a positive example of how a museum can manage a large project on a limited budget. The budget for this project meant that objects were not moved to off-site storage facilities while collection storage spaces were renovated. This practice is often followed, as it allows for collections to be catalogued, photographed, organized, and packed so that when the infrastructure is in place, objects can be moved back on-site more efficiently. The lessons learned that could be applied to other similarly-sized projects are:

- Curators retained access to the collection, enhancing their ability to conduct research for the major reinstallation of the European collection, slated to reopen in September 2015.
- The Wadsworth staff learned how to do many of the steps involved in the project directly. Prime examples of this can-do approach included the staff's organization of a series of tutorials led by: Stephen Koob, conservator at Corning Museum of Glass, for the Museum's conservators, registrars, curators, and

cataloguers on the best methods of washing and handling glass; and Chris Barber of ARTEX in the creation of secure packing environments for objects of varying media.

In addition, this endeavor has provided professional experience for at least ten full time or project-based employees, many just entering the field in pursuit of careers in collections management. Policies and procedures related to object handling and cataloging have also been reviewed and updated.

Audiences

Phase I of the Collection Storage Renovation project has served three major audiences – curators, researchers, and the public. The project overlapped with the planning for reinstallation of the museum's Contemporary and European collections, set to open in January and September of 2015, respectively. The improved visibility of objects in storage and upgraded cataloguing resulting from this project allowed curators to "shop" in their own collection, rediscovering important objects that will reemerge in the Museum's reinstallation.

Visits to storage by scholars and connoisseur groups have already begun. These include experts in European porcelain; European sculpture; Chinese ceramics; Ancient bronzes; American furniture and silver; and object conservators. Groups cannot exceed 15 persons and must be accompanied by a minimum of 2 staff (usually a curator and a registrar). The introduction of biometric readers and the expansion/update of closed circuit camera systems have increased the security controls for access to the space and documentation of that access.

In addition, while it has taken place in a part of the museum that the public does not see, this project will directly impact the visitor experience. By completing this project, 10,294 square feet of gallery space that had been used previously for storage will be renovated and reopened to the public with permanent and special exhibitions. In the future, the research that has been done on the objects will be available to the public through the Museum's website.

Continuation of the Project

As this project represented Phase I of the overall Collection Storage Renovation plan, the lessons learned from this phase will inform subsequent collection storage projects. The museum will continue to conduct condition surveys and upgrade methods of storage for collections. In addition, a reorganization of Costume & Textile storage will begin on July 1, 2014.

This project has also led to important collaborative partnerships. As mentioned previously, the new collection storage spaces have given access to researchers and other interest groups. For example, curators of ancient art from the Yale University Art Gallery visited and have expressed interest in organizing a small exhibition of ancient Greek and Roman bronzes to be held both at Yale and in Hartford. Primarily drawn from the Wadsworth's collection, it would be accompanied by a brochure and a full digital

publication of the collection with 3-D modeling of the figures, perhaps some chemical analysis of the bronze, and x-rays, or other analytical photography.

The American Decorative Arts Department has greatly benefited from the improvements in the organization, navigability, and security of art storage. Associate Curator of American Decorative Arts, Alyce Englund, has cultivated new programs, community relationships, and exhibition ideas as a result of broadened access to the collection. Most notably, Alyce has expanded the ability to develop access to collections in storage for the Society of American Period Furniture Makers (SAPFM), a national association of skilled woodworking professionals, conservators, and scholars. With this group, Ms. Englund has been able to conduct close examination of works with selected SAPFM members in the production of design templates, measured drawings, and geometric calculations of furniture. Most recently, Ms. Englund aided SAPFM members in the examination and research of a Connecticut high chest which SAPFM reproduced for the Windsor Historical Society's Strong-Howard House. These collaborations have led to new scholarly interpretations of historic techniques used in the production of early furniture. The result of which has enlivened lesser-seen furniture in storage and will help to build community partnership programs, new museum audiences, and instructive video demonstrations to show to visitors in our galleries and on our website.

Long Term Impact

Phase I of the Collection Storage Renovation project has had a substantial impact on the Museum as a whole. The process of completing the project, including staffing and training, will serve as a model for the Registrar's office moving forward. In addition, it has spurred the review and revision of policies and procedures related to the care of the collection in storage. The Museum's commitment to this project assisted us in raising funds for the gallery renovation project, to be completed in 2015. When finalized, the gallery renovation will have addressed 31,418 square feet, spanning 32 galleries, 15 public spaces, and more than 8,000 square feet of existing space repurposed to create new special exhibition galleries. As the museum moves forward into Phases II-V of the Collection Storage Renovation project, the storage conditions of its collections of costume and textiles, works on paper, and paintings will be significantly improved, and other space in the Museum currently used for storage will be reopened to the public.